

Translation

PATENT COOPERATION TREATY

PCT/JP2003/015346



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty) **27 MAY 2005**

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PC-9004	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/JP2003/015346	International filing date (day/month/year) 01 December 2003 (01.12.2003)	Priority date (day/month/year) 02 December 2002 (02.12.2002)	
International Patent Classification (IPC) or national classification and IPC G03F 7/039, 7/004, 7/40, H01L 21/027			
Applicant TOKYO OHKA KOGYO CO., LTD.			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☐ (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:

☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒ Box No. I Basis of the report

☐ Box No. II Priority

☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

☐ Box No. IV Lack of unity of invention

☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

☐ Box No. VI Certain documents cited

☐ Box No. VII Certain defects in the international application

☒ Box No. VIII Certain observations on the international application

Date of submission of the demand 27 May 2004 (27.05.2004)	Date of completion of this report 29 September 2004 (29.09.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2003/015346

Box No. 1 Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

☒ The international application as originally filed/furnished

☐ the description:

pages _____, as originally filed/furnished
 pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____

☐ the claims:

pages _____, as originally filed/furnished
 pages* _____, as amended (together with any statement) under Article 19
 pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____

☐ the drawings:

pages _____, as originally filed/furnished
 pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of these sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP03/15346

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims _____ YES

Claims _____ 1-7 _____ NO

Inventive step (IS)

Claims _____ YES

Claims _____ 1-7 _____ NO

Industrial applicability (IA)

Claims _____ 1-7 _____ YES

Claims _____ _____ NO

2. Citations and explanations (Rule 70.7)

Document 1: JP, 2000-338674, A (Fuji Photo Film Co., Ltd.), 8 December, 2000 (08.12.00), claim 1, [0033]-[0037], [0076]-[0095], [0108], [0116]-[0118], [0131]-[0134]

Document 2: JP, 5-315241, A (K.K. Sorutekku), 26 November, 1993 (26.11.93), claim 1

Document 3: JP, 2002-162745, A (Tokyo Ohka Kogyo Co., Ltd.), 7 June, 2002 (07.06.02), claims 8 and 9

The subject matters of claims 1-5 do not appear to be novel in view of document 1. Document 1 describes a positive photo-resist composition containing (1) a resin having (a) a repeating unit having an alkali soluble group protected by at least one group containing an alicyclic hydrocarbon structure represented by the general formulas (pI)-(pVI), (b) a repeating unit having a group represented by the general formula (III), (c) a repeating unit represented by the general formula (II), and (d) a repeating unit represented by the general formulas (III-a)-(III-d), (2) a compound that produces acids when irradiated with active light rays or radiation rays, and (3) a solvent. The subject matters of claims 1-5 as a positive photo-resist composition are the same as the invention described in document 1.

The subject matter of claim 6 does not appear to be novel in view of document 1. Document 1 describes an onium salt with fluorinated alkylsulfonic acid ions as anions.

The subject matter of claim 7 does not appear to be novel in view of document 1. Document 1 describes a basic compound containing nitrogen having a structure represented by the formula (A).

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP03/15346

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

A specification of the subject matters of claims 1-7 as "used for a resist pattern forming method in the lithography process including a process wherein, after liquid present on a board is replaced with a liquid for critical drying after developed in alkali, the said liquid for critical drying is dried through a critical state," is not clear as a matter to specify a positive resist composition. Accordingly, claims 1-7 do not meet the requirement of clarity in accordance with the provisions of PCT Article 6.

The subject matter of claim 4 relates to a positive resist composition with "the said composition (A) having a constitutive unit containing a polycyclic group different from any of (a4) the said acid-dissociation dissolution repressing group, the said lactone unit, and the said polycyclic group containing an alcoholic hydroxyl group."

However, of the said constitutive unit (a4), only "at least one chosen from among a tricyclodecanyl group, an adamantyl group, and a tetracyclodecanyl group" is disclosed in the sense of PCT Article 5, so the subject matter of claim 4 does not appear to be supported by the disclosure in the specification in the sense of PCT Article 6. The scope of the said constitutive unit is unclear, so it does not meet the requirement of clarity in the sense of PCT Article 6.